



Rocky Mountain
Remediation Services, L.L.C.
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PROCEDURE

Equipment Operation at Decontamination Facilities

OPS-PRO.013

Revision 0

Effective Date: May 3rd, 1999

Approved by:


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1.0 PURPOSE

This procedure provides instructions to operate RMRS equipment at the main decontamination facility (MDF) and the protected area decontamination facility (PADF).

2.0 SCOPE

This procedure applies to Rocky Flats Environmental Technology Site (RFETS) employees and subcontractors operating RMRS equipment at decontamination facilities under the supervision of the Water Operations Department.

This document supercedes 4-I11-ER-OPS-FO.30, *Environmental Restoration Program Division Equipment Operation*.

This procedure addresses the following topics:

- Unloader and forklift operation;
- Pressure washer operation;
- Pump operation;
- Generator operation; and
- Fuel-fired portable heater operation.

The Operators Daily Inspection Checklist is included as Appendix 1 of this document.

Each subsection of the instructions section is a stand-alone section and may be performed independently of other subsections.

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3.0 DEFINITIONS

Forklift: A 5000 lb. capacity, rough terrain, four-wheel drive for outside use.

Pumps: Trash pump, centrifugal pumps and sump pumps.

Portable Fuel Fired Heater: A propane, direct fired, forced air heater.

Subcontractor: The RMRS designated subcontractor responsible for day-to-day operation of the decontamination facilities.

Three point-contact: Three limbs are in contact with the vehicle during mounting and dismounting.

Unloader (skidsteer): A four-wheeled utility tractor with fork, bucket loader and attachments.

User: RFETS employees or subcontractors who use equipment at the decontamination facilities.

4.0 RESPONSIBILITIES

4.1 Planning and Coordination

Responsible Manager/Designee

- [1] Ensure that all personnel performing this evolution are trained in the use of this procedure, have proper training as specified in Section 4.2 of this procedure and have the appropriate health and safety training as specified in the Decontamination Facilities Health and Safety Plan, RF/ER-96-0049.

Subcontractor

- [1] Operate equipment.
- [2] Perform routine maintenance and minor repairs to equipment and facilities.

User

- [1] Operate equipment.
- [2] Report any equipment malfunctions or abnormal conditions to Subcontractor.
- [3] Complete required entries on the Operators Daily Inspection Checklist (Appendix 1).

Health and Safety Specialist/Designee

- [1] Conduct a health and safety briefing before commencement of activities.
- [2] Conduct vapor monitoring as outlined in the Health and Safety Practices Manual and/or the Occupational Safety and Industrial Hygiene Program Manual.

4.2 Training

All personnel performing this evolution must have the following training:

- Building Indoctrination 966 (if working at PADF) or Building 903A&B Indoctrination (if working at MDF);
- Decontamination Pad Equipment Operations Qualification Document;
- OSHA 40 HAZWOPER and current refresher ;
- Pressure Safety Awareness;
- General Employee Radiological Training;
- Hazard Communications;
- Hazard Communications Checklist;
- Other RFETS training, as required.

Operators shall be properly licensed in accordance with *Powered Industrial Trucks*, Chapter 11, Occupational Safety and Industrial Hygiene Program Manual prior to operating the unloader and forklift.

All personnel performing this procedure must read the applicable manufacturers operating manual before operating any piece of equipment at the main decontamination facility or the protected area decontamination facility.

5.0 INSTRUCTIONS

5.1 Unloader and Forklift

5.1.1 Unloader and Forklift Safety Instructions

User

- Personnel shall review the Decontamination Facilities Health and Safety Plan for personal protection equipment (PPE) requirements.
- Check oil level, other fluids and fan belt prior to starting the equipment.
- Personnel shall warm equipment at least two minutes prior to running the engine at operating speed.
- Personnel shall ensure that all operational flashing lights, seat belts and back-up alarms are working prior to vehicle use.
- Ensure engine covers are in place before starting the unloader and forklift.
- Verify the manufacturer's load limit placard is attached and verify that the load limit will not be exceeded.
- Personnel shall check for a charged ABC fire extinguisher mounted on the vehicle.
- Personnel shall wear hearing protection when operating equipment.
- Personnel shall visually survey their working area prior to beginning operations, checking for uneven ground, drop-offs, obstacles and personnel. Ensure personnel and obstacles are cleared from the work area.
- A designated spotter will guide the vehicle, as required, for safe handling.

- Personnel shall start the unloader/forklift engine only while sitting in the operator's seat.
- Personnel shall face the unloader when mounting or dismounting and will maintain three-point contact with steps and grab handles.
- Personnel shall never jump on or off the equipment.
- Do not allow other personnel to ride on the equipment.
- Personnel shall never attempt to mount or dismount while the vehicle is moving.
- Personnel shall not use the steering or control lever as a handle when mounting or dismounting the vehicle.
- The onsite Maintenance Garage is responsible for fueling the unloader and forklift.
- Personnel shall ensure that no one is standing within ten feet of the unloader when operating due to 90-degree turn capabilities.
- Personnel shall operate controls smoothly at all times to prevent equipment accidents and spills.
- Personnel shall carry loads low and avoid sudden starts, stops, and turns.
- Personnel shall wear seatbelt at all times when operating machinery.

5.1.2 Unloader and Forklift Operating Instructions

User

NOTE 1 *The manufacturer's operating manual must be read prior to user's initial operation the unloader or forklift.*

- [1] Complete the Operators Daily Inspection Checklist in accordance with *Powered Industrial Trucks*, Chapter 11, Occupational Safety and Industrial Hygiene Program Manual. The checklist is included as Appendix 1 of this document.
- [2] Remove wheel blocks.
- [3] Lower the seat bar and fasten seat belt. Ensure that the forklift parking brake is set and controls are in neutral or park.
- [4] Turn key switch on and ensure that the equipment gauges light up.

CAUTION

Operating the starter more than thirty seconds at one time may damage the starter.

- [5] Start the engine.
- [6] **IF** the engine does not start within 30 seconds,
THEN allow the starter to cool 30 seconds between starting attempts.
IF the engine will not start after six attempts
THEN contact the Subcontractor.
- [7] Turn on warning lights and test the horn and back-up alarms.
- [8] Test the steering in both directions while moving slowly in a safe area.
- [9] Attach necessary implements to the forklift or unloader in accordance with the manufacturer's recommendations.

- [10] Check that the implements are secure prior to lifting.
- [11] Approach the load slowly and squarely with fork tips straight, low and level.
- [12] Tilt the forks back to keep the load balanced.
- [13] Lift the forks approximately one foot off the ground.

WARNING

A clear viewing area surrounding the unloader is necessary to prevent accidents.

- [14] Ensure the load is balanced and secured prior to movement to prevent spills.
- [15] Slowly and carefully carry the load to the destination.

5.1.3 Unloader and Forklift Shutdown Instructions**User**

- [1] Come to a complete stop, place the controls in park and set the parking brake.
- [2] Lower the forks to the ground.
- [3] Idle the engine for approximately two minutes for gradual cooling.
- [4] Shut off the engine.
- [5] Cycle the hydraulic controls to eliminate residual pressure.
- [6] Block the wheels if the vehicle is parked on uneven ground.

Subcontractor

- [1] Perform maintenance and minor repairs to the equipment and facilities in accordance with the Maintenance Management System and the manufacturer's operating manual.

5.2 Pressure Washer

5.2.1 Pressure Washer Safety Instructions

User

- Personnel shall wear PPE in accordance with the Decontamination Facilities Health and Safety Plan.
- Personnel shall know how to stop the pressure washer quickly in case of emergency.
- Personnel shall check the Ground Fault Circuit Interrupter (GFCI) receptacle and all other electrical components on the control panel before each use. Moisture or ice can cause an electrical component malfunction or short circuit that could result in electrocution.
- Personnel shall refuel in a well-ventilated area with the engine stopped. A drip pan shall be used during refueling activities.
- The equipment and the fuel source must be electrically bonded (metal to metal contact) to prevent static sparking during refueling and equipment operation.
- A fire extinguisher will be available during refueling and operation.

5.2.2 Pressure Washer Operation Instructions

User

NOTE 1 *The buddy system is required for all decontamination activities using the pressure washers.*

NOTE 2 *The manufacturer's operating manual must be read prior to user's initial operation of the pressure washer.*

[1] Open and tie back doors to pressure washer shed for proper ventilation.

WARNING

Adequate ventilation in the pressure washer shed is required to prevent carbon monoxide accumulation.

- [2] Check fuel and oil levels.
- [3] **IF** the fuel or oil levels are low,
THEN notify Subcontractor to fill the tanks.
- [4] Ensure quick coupler on discharge hose is locked before using pressure washer.
- [5] Connect water supply to pressure washer and open the water supply valve.
- [6] Don PPE in accordance with the Decontamination Facilities Health and Safety Plan.

WARNING

Operating the pressure washer in cold weather may cause personal injury due to ice buildup on walking surfaces.

- [7] Start the pressure washer using the pull cord or ignition switch.

WARNING

High pressure steam from the pressure washer can penetrate clothing and skin causing injury.

CAUTION

Operating the pressure washer with the gun in OFF for extended periods of time may damage the pressure washer.

- [8] Pull trigger for high pressure and adjust spray pressure with the wand handle.
- [9] **IF** water does **NOT** come out of the wand within one minute,
THEN stop the engine and notify the Subcontractor.
- [10] Turn on the burner with electric switch and begin decontamination activities in accordance with RMRS/OPS-PRO.070, *Equipment Decontamination at Decontamination Facilities*.

WARNING

DO NOT decontaminate equipment from an elevated surface without fall protection equipment and approval from the Responsible Manager and the Health and Safety Specialist/Designee.

- [11] Turn the burner off three minutes prior to pressure washer shut down to prevent system damage.

6.2.3 Pressure Washer Shutdown Instructions**User**

- [1] Turn pressure washer key off once pressure washer has adequately cooled.
- [2] Pull the trigger on the gun to relieve pressure.
- [3] Close the clean water supply valve, then detach the water hose from pressure washer and clean water tank.
- [4] Drain and roll water hose.
- [5] Plug the air compressor into an electrical outlet.
- [6] Couple the air compressor air hose into the inlet water supply valve using a quick couple adapter. Blow out the gun and hose with the air compressor by pulling the gun trigger for five minutes or until no water exits the gun.
- [7] Detach the gun from the pressure washer hose.
- [8] Detach the air compressor hose from the pressure washer and roll up air compressor hose.
- [9] Release the pressure in the air compressor tank by turning the nut on the bottom of compressor tank to bleed the tank.
- [10] Roll up the pressure washer hose.

[11] Secure equipment in the pressure washer shed.

[12] Remove and dispose of PPE in accordance 5-21000-OPS-FO.06, *Handling Personal Protective Equipment*.

Subcontractor

[1] Perform maintenance and minor repairs to equipment and facilities in accordance with the Maintenance Management System and the manufacturer's operating manual.

5.3 Pumps

5.3.1 Pump Safety Instructions

- Personnel shall wear PPE in accordance with the Decontamination Facilities Health and Safety Plan.
- Personnel shall know how to stop the pumps quickly in case of emergency.
- Personnel shall check the Ground Fault Circuit Interrupter (GFCI) receptacle and all other electrical components on the control panel before each use. Moisture or ice can cause an electrical component malfunction.
- Personnel shall not smoke or allow flames or sparks in the area where gasoline is stored.
- Personnel shall refuel in a well-ventilated area with the engine stopped. A drip pan shall be used during refueling activities.
- The equipment and the fuel source must be electrically bonded (metal to metal contact) to prevent static sparking during refueling and equipment operation.
- A fire extinguisher will be available during refueling and operation.

5.3.2 Pump Operation Instructions

User

NOTE 1 *The buddy system is required for all decontamination activities using the pumps.*

NOTE 2 *The manufacturer's operating manual must be read prior to user's initial operation of any pump.*

CAUTION

Ice buildup in the lines or pump can stop the water from running through the pump. Running the engine without water for long periods of time may cause damage to the pump.

WARNING

If pump wheels are not blocked before starting the pump, the pump may move due to vibration.

- [1] Check oil level and other fluid levels.
- [2] **IF** oil or other fluid level is low,
THEN add appropriate fluid as needed.
- [3] Conduct a visual inspection of connections, hoses and valves.

WARNING

Filling the fuel tank while the engine is hot can result in a fire.
Overfilling the fuel tank may result in a hazardous spill.
Operating the pump against a closed valve could cause the hoses to rupture.
Operating a pump without oil in the pump casing may result in pump damage.

- [4] Add water to the pump housing to prime the pump, if necessary.
- [5] Engage choke prior to starting.
- [6] Pull cord to start the pump.

- [7] Disengage choke completely after starting. Partial choke position may cause excessive engine speed.

WARNING

Attempting to make repairs when system is under pressure could cause personal injury.

- [8] **IF** leaks do occur in the hoses, couplings or valves,
THEN shut down the pump and repair or replace equipment as necessary.

5.3.3 Pump Shutdown Instructions

User

- [1] Slow engine speed down.
- [2] Turn engine switch off.
- [3] Slowly release intake coupling and wait for pressure to dissipate before disconnecting hoses completely.
- [4] Drain out all hoses and pump casing.
- [5] Turn off pump engine fuel supply valve.
- [6] Store all equipment.

Subcontractor

- [1] Perform maintenance and minor repairs to the equipment and facilities in accordance with the Maintenance Management System and the manufacturer's operating manual.

5.4 Generator

5.4.1 Generator Safety Instructions

- Personnel shall wear PPE in accordance with the Decontamination Facilities Health and Safety Plan.
- Personnel shall know how to stop the generator quickly in case of emergency.
- Personnel shall understand the use of generator controls, output receptacles and connections.
- Personnel shall try to keep the generator dry and upwind from decontamination operations.
- Personnel shall check the Ground Fault Circuit Interrupter (GFCI) receptacle and all other electrical components on the control panel before each use. Moisture or ice can cause an electrical component malfunction.
- Personnel shall keep the generator at least three feet away from buildings and other equipment during operation.
- Personnel shall not touch the muffler while it is hot. The engine shall be allowed to cool ten minutes before the generator is stored.
- Personnel shall not smoke or allow flames or sparks in the area where the generator is refueled or where gasoline is stored.
- Personnel shall refuel in a well-ventilated area with the engine stopped. A drip pan shall be used during refueling activities.
- The equipment and the fuel source must be electrically bonded (metal to metal contact) to prevent static sparking during refueling and equipment operation.
- Personnel shall ensure adequate ventilation while the generator is running to prevent carbon monoxide buildup.

- A fire extinguisher will be available during refueling and operation.

5.4.2 Generator Operating Instructions

User

NOTE 1 *The buddy system is required for all decontamination activities using the generator.*

NOTE 2 *The manufacturer's operating manual must be read prior to the user's initial operation of the generator.*

- [1] Check the oil level and other fluid levels.
- [2] Verify that the alternating current (AC) circuit breaker is in OFF.

CAUTION

Operating the starter more than five seconds can damage the motor.

- [3] Connect the POL fitting of the hose and regulator assembly to the propane cylinder by rotating the POL nut counterclockwise into the propane cylinder's valve outlet and securely tighten with a wrench.
- [4] Securely tighten all gas connections.
- [5] Connect power cord using a Ground Fault Circuit Interrupter (GFCI).
- [6] Slowly open the main valve at the propane cylinder.
- [7] Start the engine.
- [8] **IF** the engine fails to start,
THEN release the switch and wait ten seconds before operating the starter again.

NOTE 3 *The generator has an Auto Throttle System. With the switch in AUTO, engine speed is automatically reduced to an idle when all loads are turned off or disconnected.*

- [9] Run the Auto Throttle System on **AUTO** to minimize fuel consumption when no load is applied.

NOTE 4 *The auto-throttle system will not respond to electrical loads of less than one ampere. The system is not effective for use with appliances that require only momentary power. To avoid extended warm-up periods, keep the switch in **OFF** until the engine reaches operating temperature.*

- [10] **IF** the Ground Fault Circuit Interrupter (GFCI) trips,
 THEN follow instructions in the manufacturer's operating manual.
- [11] **IF** the main power circuit breaker switch or the circuit protector switch trips,
 THEN observe that the appliance is working properly and that it does not exceed the rated load capacity of the circuit before resetting the appropriate circuit breaker to **ON**.

5.4.3 Generator Shutdown Instructions

- [1] Position the AC circuit breaker to OFF.
- [2] Turn the engine switch to OFF.
- [3] Perform maintenance in accordance with the manufacturer's operating manual.
- [4] Close the propane bottle valve and disconnect the bottle.
- [5] Store the propane bottle in the storage cage.

Subcontractor

- [1] Perform maintenance and minor repairs to the equipment and facilities in accordance with the Maintenance Management System and the manufacturer's operating manual.

5.5 Portable Fuel-Fired Heaters

5.5.1 Portable Fuel-Fired Heater Safety Instructions

NOTE 1 *The use of portable fuel-fired heating equipment at RFETS is governed by HSP-31.09 Portable Fuel-Fired Heaters. Liquid fuel propane cylinders will be handled in accordance with 1-X45-HSP-32.01, Handling and Storage of Flammable and Combustible Liquids for Fire Safety.*

- Check the heater thoroughly for damage. **DO NOT** use heater if damaged.
- **DO NOT** modify the heater and **DO NOT** use if modified.
- Use only propane gas.
- Inspect the "O" ring seat at the bullnose of the Petroleum Oil Lubricant (POL) valve for damage, if damaged replace.
- Mount the propane cylinders vertically with the shut off valve up.
- Secure the propane cylinders to prevent them from falling or being damaged.
- Locate heater at least ten feet from any combustible material.
- **DO NOT** direct heater exhaust toward the propane bottles.
- Use only in areas free from excessive dust, contamination, gasoline, paint thinner or other flammable vapors, water spray, rain or dripping water.
- Place heater on a stable level surface.
- **DO NOT** touch heater while hot.

5.5.2 Portable Fuel-Fired Heater Operation Instructions

CAUTION

Propane is heavier than air. If a propane leak occurs, propane will accumulate at the lowest point, potentially reaching an explosive level.

WARNING

Combustion produces carbon dioxide and carbon monoxide. Failure to provide adequate ventilation could result in injury or death.

User

- [1] Read the manufacturer's operating manual prior to operating any heater.
- [2] Position the heater in accordance with HSP 31.09.

WARNING

DO NOT place heater within ten feet of any combustible object.

- [3] Connect the POL fitting of hose and regulator assembly to the propane cylinder by rotating the POL nut counterclockwise into the propane cylinder's valve outlet and securely tighten with a wrench.
- [4] Securely tighten all gas connections.
- [5] Connect power cord using a Ground Fault Circuit Interrupter (GFCI).
- [6] Slowly open the main valve at the propane cylinder.
- [7] Turn the heater toggle switch to the "ON" position and heater will ignite.
- [8] Monitor air quality as requested by the Health and Safety Specialist/Designee in accordance with the Health and Safety Practices Manual and/or Occupational Safety and Industrial Hygiene Program Manual.

WARNING

IF a gas odor is detected, IMMEDIATELY shut down heater and STOP operations.

5.5.3 Portable Fuel-Fired Heater Shutdown Instructions**User**

- [1] Securely close valve on the propane cylinder.
- [2] Continue to operate the heater until all the propane has burned.
- [3] Turn the heater toggle switch to the "OFF" position.
- [4] Allow the heater to cool at least fifteen minutes or until cool to the touch before removing the propane cylinder for storage.
- [5] Remove propane bottle and store appropriately.

Subcontractor

- [1] Perform maintenance and minor repairs to the equipment and facilities in accordance with the Maintenance Management System and the manufacturer's operating manual.

8.0 POST-PERFORMANCE ACTIVITY**Responsible Manager/Designee**

Complete a Post-Job Review Checklist, as necessary, in accordance with the Integrated Work Control Program Manual.

Ensure that the Operators Daily Checklist is forwarded to the RMRS Records Center for disposition in accordance with RMRS/RM-06.02, *Records Identification, Generation and Transmittal* and RMRS/RM-06.03, *Records Receipt, Processing, Retrieval and Disposition*.

9.0 RECORDS

The following documents generated during the performance of the tasks defined in this document must be copied and distributed as follows:

<u>Document</u>	<u>Record Type- Determination</u>	<u>Protection/Storage Methods</u>	<u>Processing Instructions</u>
Operators Daily Inspection Checklist	QA	RM shall implement a reasonable level of protection to prevent loss and/or degradation while in process. Documents shall be protected utilizing standard office equipment and methods while in process.	RM transmits to RMRS Document Control

10.0 REFERENCES

5-21000-OPS-FO.06, Handling of Personal Protective Equipment

RMRS/OPS-PRO.070, Equipment Decontamination at Decontamination Facilities

RF/ER-96-0049, Decontamination Facilities Health and Safety Plan

Health and Safety Practices Manual

Integrated Work Control Plan

Occupational Safety and Industrial Hygiene Program Manual

APPENDIX 1**OPERATORS DAILY INSPECTION CHECKLIST**

Truck No. _____ Make _____ Date _____

Hour Meter Reading: Start _____ End _____ Hours on Shift _____

Check Each Item If OK, Write OK	Shift			Explain Below If Not OK or Any Other Action Taken
	1st	2nd	3rd	
<u>All Trucks</u>				
Steering				
Horn				
Lights				
Backup Alarm				
Brakes				
Tires				
Hoist Cylinder				
Hydraulic Oil Level				
Hydraulic Controls				
Forks				
Limit Switches				
Safety Belts				
Fire Extinguisher				
Windows				
<u>Gasoline, Diesel or Propane Trucks</u>				
Battery				
Fuel				
Water/Antifreeze				
Engine Oil Level				
Oil Pressure				
<u>Electric Powered Trucks</u>				
Battery Plug Connection				
Battery Charge				
Battery Load Test				
Remarks:				
Operator's Signature _____				

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*Checklist is excerpted from *Powered Industrial Trucks*, Chapter 11, Occupational Safety and Industrial Hygiene Program Manual.

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